FIG. 1

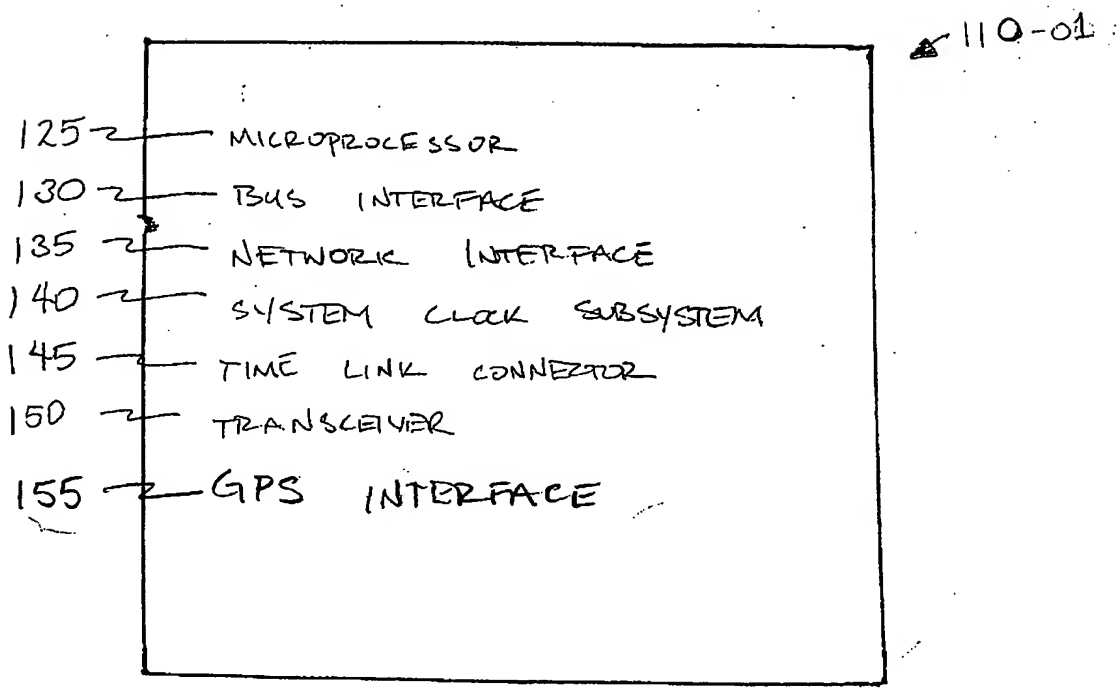
110-01
125
MICROPROCESSOR
130
BUS INTERFACE
135
NETWORK INTERFACE
140
SYSTEM CLOCK SUBSYSTEM
145
TIME LINK CONNECTOR
150
TRANSCEIVER
155
GPS INTERFACE

FIG. 2

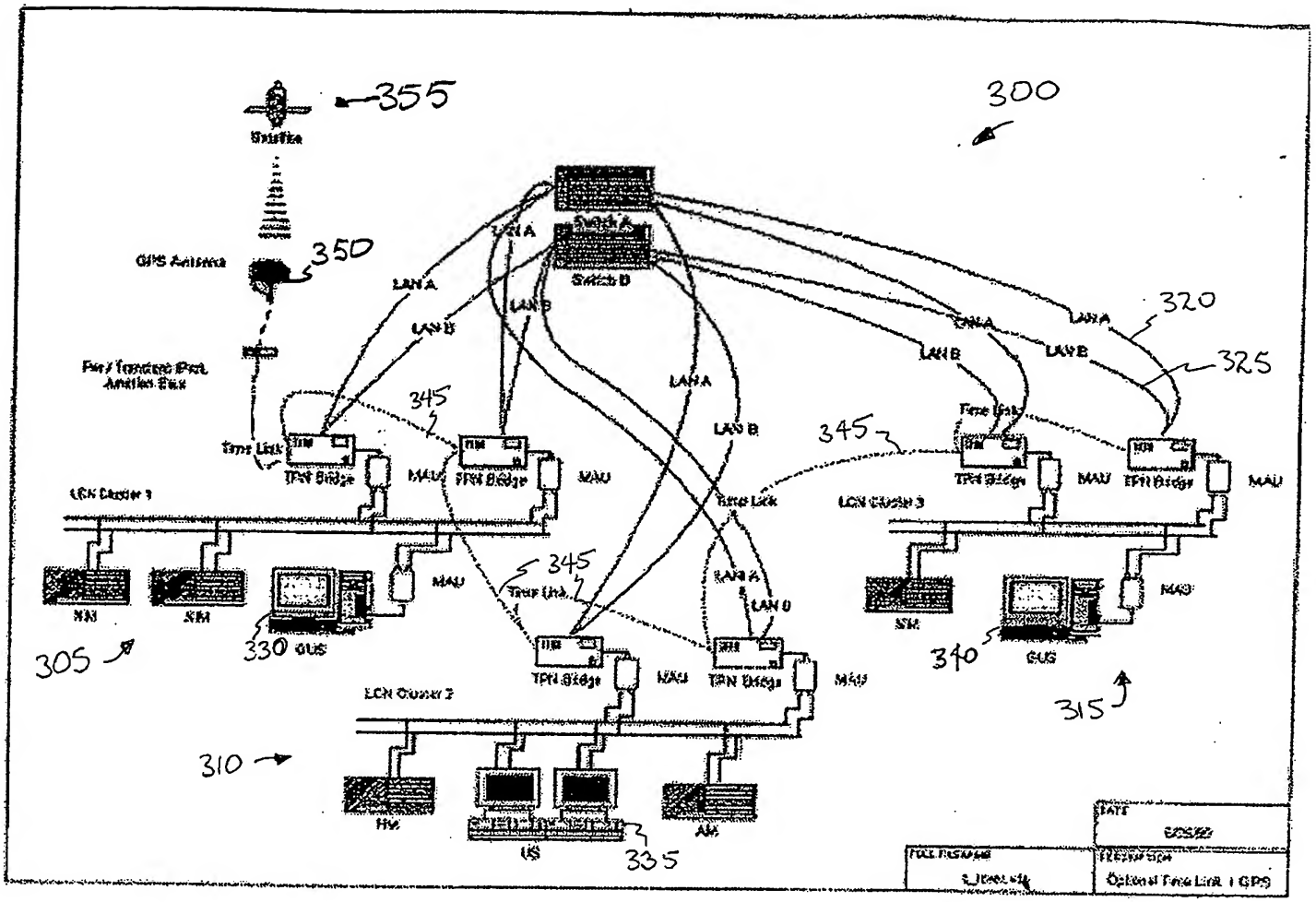

FIG. 3

BEST AVAILABLE COPY

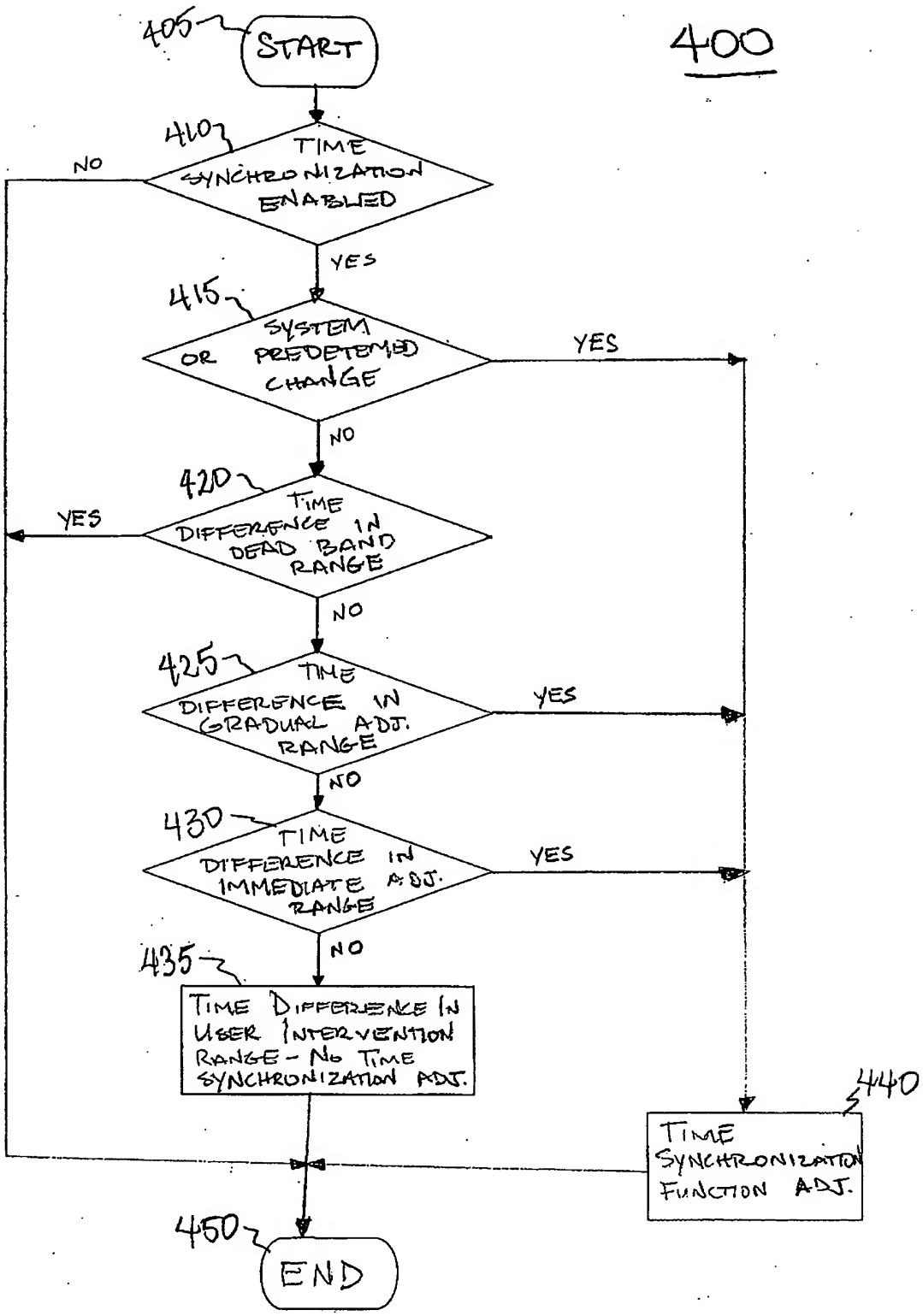
400
405
START
410
TIME SYNCHRONIZATION ENABLED
NO
YES
415
SYSTEM OR PREDETEMED CHANGE
YES
NO
420
TIME DIFFERENCE IN DEAD BAND RANGE
YES
NO
425
TIME DIFFERENCE IN GRADUAL ADJ. RANGE
YES
NO
430
TIME DIFFERENCE IN IMMEDIATE ADJ. RANGE
YES
NO
435
TIME DIFFERENCE IN USER INTERVENTION RANGE - NO TIME SYNCHRONIZATION ADJ.
440
TIME SYNCHRONIZATION FUNCTION ADJ.
450
END

FIG. 4

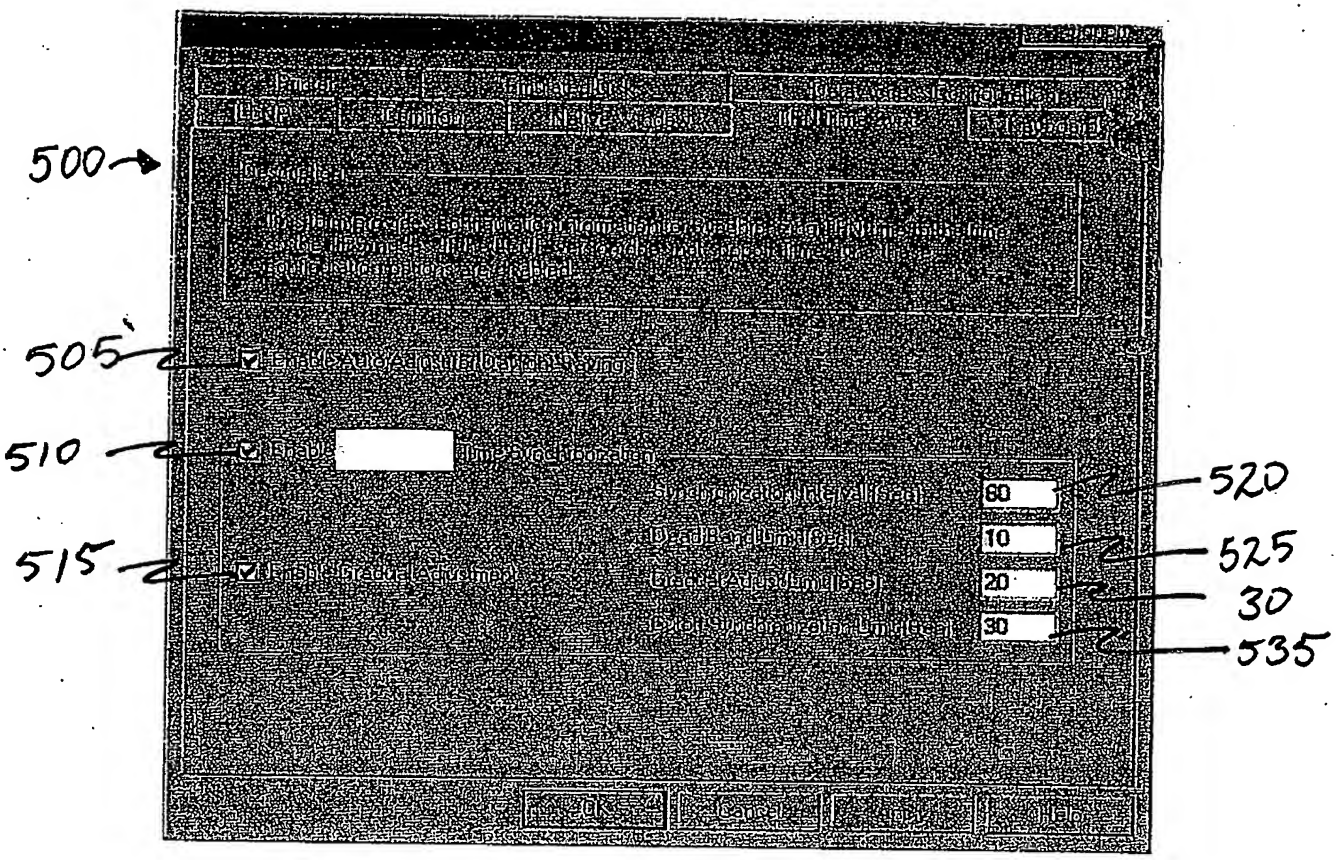

FIG. 5

BEST AVAILABLE COPY

Accumulated Seconds Register:

Contains: Current Time (Calendar Time in Seconds)

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
M.S. Time (Byte # 4)								Time Byte #3							
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Time Byte #2								L.S. Time (Byte #1)							

32 Bit Binary representation of the present time in seconds

FIG. 6

Interpolation Register:

Contains: the fractional part of the current second

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
0	0														

Number of 100 Usec intervals since last Second Rollover.

FIG. 7

Status Register:

Contains Information related to: Current Sync State, Mode of Operation (Master, Slave, Listener), Error Codes, and a status bit to indicate if a new time value has been written to the Real Time Clock Subsystem.

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

FIG. 8

Command Register

Write Only - Command Register Write Mailbox.

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
d	d	d	d	d	D	d	d	0	0	1	0	c	c	c	c
CMD Data Field								CMD Flag				CMD OP Code			
								$2				$0 - $E			
CMD Sub Code				CMD Class Code				$2				$F			

FIG. 9

COMMAND OPERATION CODES:

$0	No operation
$1	Enable Master Clock Source Functional Mode
$2	Enable Slave Clock Source Functional Mode
$3	Stop Transmitting
$4	Enter Time Byte #1 (Command Data Byte contains Time Information)
$5	Enter Time Byte #2 "
$6	Enter Time Byte #3 "
$7	Enter Time Byte #4 and set "
$8	Local only
$9	Receive Alternately Cables A & B
$A	Disable Power Line Sync
$B	Enable Power Line Sync
$C	Enter Enhanced Mode Operation
$D	Exit Enhanced Mode Operation
$E	Select A/C Reference
$F	Extended Command Set.

Gradual Adjust Control

Sub / Class Codes		Description	
Sub Code	Class Code		
F	0	Control Time Link Mastership.	Enable
A	0		Disable
Value	1	Load Osc. Skew Compensation Value.*	Signed value Integer of range –7 to +7.
F	2	Control Bridge Functionality.	Enable
A	2		Disable
F	3	Osc Skew Control. **	Enable
A	3		Disable

* This command allows fine tuning control of the real time clock drift rate

** This command allows enable/disable fine tuning control of the real time clock drift rate when the Real Time Clock is operating as Clock Master and no GPS Reference is attached by means of the Time Link Port.

FIG. 10